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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/189,637	11/10/1998	SHIROU SUZUKI	06257.0026	5700

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EXAMINER

LAO, LUN S

ART UNIT PAPER NUMBER

2643

DATE MAILED: 04/03/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/189,637

Applicant(s)

SUZUKI, SHIROU

Examiner

Lun-See Lao

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. Claims 1-12 of U.S. Application 09/189,637 filed on 01/13/2003 are presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4-8, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graupe (US PAT. 4,185,168) in view of IBM disclosure.

Regarding claim 1, Graupe teaches that an apparatus for reducing a noise component contained in an input signal, comprising:

a detecting device for detecting a level (see fig.4, (band1, 2.n)) of said noise component

an adjusting device for adjusting a level (see fig.4, (18-1)) of said input signal so as to make said level of said noise component equal to or lower than a predetermined threshold level (see fig.4, (15-1,2.n));

a reducing device (fig.4, (18b or 18c)) for reducing a signal component of said adjusted input signal whose level is equal to and lower than said predetermined threshold level (see fig.1, 107), but Graupe fails to teach a restoring device for restoring a level of said adjusted input signal to say level of said input signal that has not been adjusted by said adjusting device yet.

However, IBM teaches that a restoring device (see fig. c) for restoring a level of said adjusted input signal to say level of said input signal that has not been adjusted b y said adjusting device yet (see disclosure text).

Therefore, it would have obvious to one of ordinary skill in the art to utilize the teaching of IBM into Grape to provide an automatic gain control ACC circuitry to have quality audio signal.

Regarding claim 4, Graupe's reference discloses that an apparatus of the adjusting device comprises:

a determining device (Microprocessor 170)) for determining whether or not said level of said noise component is higher than said predetermined threshold level (see fig.1, 107); and

a level adjusting device (see fig.1, 102) for adjusting said level of said input signal so as to make said level of said noise component equal to or lower than said predetermined threshold level (see fig.1 107); if said determining device (107) determines that said level of said noise component is higher than said predetermined threshold level (see fig.1, 107 and col.4 line 10-col.5 line10).

Regarding claim 5, Graupe teaches that an apparatus of the reducing device comprises:

a dividing device (see fig.1, 120) for dividing said adjusted input signal into a plurality of divisional components whose frequency bands are different from each other;

a plurality of signal level detecting devices (120), each of which detects a level of one of said divisional components (see col.3 line 35-col.4 line 11);

a plurality of attenuating devices (see fig.1, 180), each of which attenuates one of said divisional components on the basis of said detected level of said corresponding divisional component (see col.4 lines 12-65);

a mixing device (see fig.1, 200)) for mixing all of said attenuated divisional components.

Regarding claims 6-7, Graupe discloses that an apparatus of the adjusting device comprises an attenuator, and said restoring device comprises an amplifier (170 microprocessor) and apparatus of the amplifier amplifies said adjusted input signal by using an inverse number of an attenuation factor (SNR-1) of said attenuator as an amplification factor (see col.4 line 64-col.5 line 35).

As to claims 8, 10-12, these are the method claims of claims 1, and 3-5, respectively. Thus note claims 1, and 3-5, respectively, for rejections.

4. Claims 2 and 9, are rejected under 35 U.S.C. 103(a) as being unpatentable over Graupe (US PAT. 4,185,168) as modified by IBM technical disclosure bulletin as applied to claim 1 above and further in view of Strahm (US PAT. 5,170,437).

Regarding claim 2, Graupe and IBM do not teach an apparatus of the detecting device comprises: an extracting device for extracting a high frequency component of said input signal from said input signal.

Stahm teaches that an apparatus of the detecting device comprises: an extracting device for extracting a high frequency component of said input signal from said input signal (see fig.2, 24); a rectifying device (18) for rectifying said extracted high frequency component; an envelope generating device (smoothing signal, 20) for generating an envelope signal of said extracted high frequency component; and a level analyzing device (2) for detecting a lowest level of said envelope signal (see col.3 line 21-col.4 line 26).

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify Strahm to have the audio information can be simply derived and processed as analog signal for use as well suited an adaptation control signal for the system.

As to claim 9, there is a method claim of claims 2 respectively. Thus note claim 2, respectively, for rejection.

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5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graupe (US PAT. 4,185,168) as modified by IBM technical disclosure bulletin as applied to claim 1 above, and further in view of Ishida (US PAT. 5,253,299).

Regarding claim 3, Graupe does not teach an apparatus of the detecting device comprises:

a sound existing part detecting device for detecting a sound existing part of said input signal; and a noise level detecting device for detecting said level of said noise component which is contained in said sound existing part.

However, Ishida teaches that an apparatus of the detecting device comprises:

a sound existing part detecting device (see fig.2, (1,2)) for detecting a sound existing part of said input signal; and a noise level detecting device for detecting said level of said noise component which is contained in said sound existing part (col.2 line54-col.3 line 5).

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify Ishida to have the audio detection can be simply derived and processed as analog signal for use as well suited an adaptation control signal for the system.

Response to Arguments

6. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kuroda (JP-359119511A) is recited to show other related the noise reduction apparatus and noise reduction method.

8. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (703) 305-2259. The examiner can normally be reached on Monday-Friday from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached on (703) 305-4708.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (703) 306-0377.

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